

REMARKS

Claims 1-56 have been examined, and all claims are rejected based on prior art.

Claims 15, 19, 20, 23, 26-29, 32, 35, and 36 are rejected under 35 U.S.C. § 102(b) as being anticipated by Durrant et al. (U.S. Patent No. 5,659,574). Claims 1, 39, and 54 are rejected under 35 U.S.C. § 102(e) as being anticipated by Zhou et al. (U.S. Patent No. 6,370,130). Claims 16-18, 21, 22, 30, 33, 34, 37, 38, and 47 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Durrant. Claims 8, 55, and 56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhou. Claims 2-6, 40-46, and 48-53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhou in view of Agrawal et al. (U.S. Patent No. 6,363,108). Claims 24 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Durrant in view of Zhou. Claims 7 and 9-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhou in view of Agrawal, as applied to claim 6, and further in view of Durrant.

Claims 15-22, 32-38, and 47-50:

Claims 15 and 32 each recite a despreader having at least one accumulate and dump circuit with an enable input that selectively dumps an accumulated sample after a variable observation period has been satisfied. Similarly, claim 47 recites a method of configurably despreading a spread spectrum signal, that includes receiving a control signal at an accumulate and dump circuit that indicates a desired variable observation length, and dumping an accumulated sample from the accumulate and dump circuit after the desired variable observation length has been satisfied. By providing variable accumulation lengths, noise interference and signal impairment in despreading operations are overcome. In particular, the present invention provides a despreader that can adapt to variations in the noise level of a signal under different operating environments.

Durrant does not teach or suggest despreading by selectively dumping an accumulated sample after a variable observation period has been satisfied, as required by each of claims 15, 32, and 47. Durrant's dump signal clears the accumulation at the end of each symbol period, which is

not variable. See, for example, col. 24, lines 57-58. Thus, claims 15, 32, and 47 are patentable over Durrant for at least this reason.

Claims 16-22 depend from claim 15, and claims 33-38 depend from claim 32. Thus claims 16-22 and 33-38 are patentable over Durrant for at least the same reasons as claims 15 and 32.

Claims 48-50 depend from claim 47. While Durrant has been applied against claim 47, Zhou and Agrawal (without Durrant) has been applied against claims 48-50. There appears to be an inadvertent mistake regarding which references were applied against claims 47-50. In any event, Zhou and Agrawal fail to make up for the deficiencies of Durrant, and thus claims 48-50 are patentable for at least the same reasons as claim 47.

Claims 23-31:

Claim 23 recites a despreader having at least one multiplier coupled to a code input line and selectively coupled to a plurality of data input lines in a manner to satisfy any one of multiple despreading protocols. This selectivity is shown in Fig. 2B where Mux A 278 and Mux B 280 receive a configuration instruction 112a and 112b, respectively, that indicates whether I-sample input 236a or Q-sample input 236b will be communicated to multiplier 272 and 273, respectively. In this manner, the multimode despreader provides all needed permutations of code and data mixing for a communication system. By having selective couplers (i.e., multipliers) in a multimode despreader, there is no need to duplicate common elements used across multiple varied despreading protocols for varied wireless applications and to future generations of despreading protocols. Rather, the invention solves these limitations with an efficient quantity of computing resources and with an adequate amount of reconfigurability, e.g., as appropriate for the class of despreading and dechannelization functions.

Durrant does not teach or suggest a despreader having at least one multiplier coupled to a code input line and selectively coupled to a plurality of data input lines in a manner to satisfy any one of multiple despreading protocols, as required by claim 23. The multipliers 1171-174 (see Fig.

15B), for example, merely multiply signals applied thereto, and do not have any selectivity. Thus, claim 23 is patentable over Durrant for at least this reason.

Claims 26-31 depend from claim 23, and thus these claims are patentable over the applied references for at least the same reasons as claim 23.

Claims 24-25, which also depend from claim 23, have Zhou in addition to Durrant applied against them. Zhou fails to make up for the deficiencies of Durrant, and thus these claims are patentable over the applied references by virtue of their dependence on claim 23.

Claims 1-14, 39-46, and 51-56:

Claim 1 recites a configurable despreader that has a selective coupler that selectively couples one of a plurality of data lines with a multiplier per any one of a plurality of despreading protocols. Similarly, claim 39 recites selectively communicating a desired input data type to a multiplier via a selective coupler, the desired input data type selected from a plurality of input data types per a desired despreading protocol. This feature provides a solution to conventional limitations of forward and backward compatibility associated with new generations of despreading and channelization protocols within any of the varied wireless applications.

Zhou does not teach or suggest a configurable despreader that has a selective coupler that selectively couples one of a plurality of data lines with a multiplier per any one of a plurality of despreading protocols, as required by claim 1, or selectively communicating a desired input data type to a multiplier via a selective coupler, the desired input data type selected from a plurality of input data types per a desired despreading protocol, as required by claim 39. Zhou relates only to a single despreading protocol. Thus, claims 1 and 39 are patentable over the applied references for at least these reasons.

Claims 2-6, 8, and 54-56 depend from claim 1, and claims 40-46 and 51-53 depend from claim 39. Many of these claims have Agawal, in addition to Zhou, applied against them. Agawal

fails to make up for the deficiencies of Zhou and, and thus these claims are patentable over the applied references by virtue of their dependence on claims 1 or 39.

Claims 7 and 9-14, which also depend from claim 1, also have Durrant in addition to Zhou and Agrawal applied against them. Durrant fails to make up for the deficiencies of Zhou and Agrawal, and thus these claims are patentable over the applied references by virtue of their dependence on claim 1.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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